

PATENT  
Docket No.: ST00015USU1(108-US-U1)  
09/938,459

AMENDMENTS

TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for compressing a Global Positioning System (GPS) signal, comprising:

receiving the GPS signal from a remote location via a wireless communications link;

removing a carrier component of the GPS signal;

matching a comb filter to the GPS signal to obtain a first output signal comprising filter lines; and

frequency shifting the filter lines in the first output signal to produce a compressed GPS signal by mixing the first output signal with a plurality of outputs from at least one frequency generator.

2. (currently amended): The method of claim 1, further including the step of ~~frequency shifting~~ filtering the compressed GPS signal through a bandpass filter to produce a second compressed GPS signal.

3. (currently amended): The method of claim 2, wherein the matching of the comb filter further includes:

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receiving a frequency reference signal from a ~~remote location~~base station via a wireless communications link;

applying the frequency reference signal to the comb filter, wherein the frequency reference signal shifts the comb filter to an expected location of the filter lines of the first output signal.

4. (canceled).

5. (previously presented): A method for compressing a Global Positioning System (GPS) signal, comprising:

receiving the GPS signal from a remote location via a wireless communications link;

removing a carrier component of the GPS signal to produce a first resultant signal;

filtering the first resultant signal through a comb filter to produce a second resultant signal that includes a plurality of signals dispersed over a frequency spectrum;

generating a plurality of mixing signals at selected frequencies; and

mixing the second resultant signal with the plurality of mixing signals to produce a first compressed GPS signal.

6. (previously presented): The method of claim 5, further including filtering the first compressed GPS signal through a bandpass filter to produce a second compressed GPS signal.

7. (currently amended): The method of claim 6, further including:

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receiving a frequency reference signal from a ~~remote location~~base station via a wireless communications link;

mixing the frequency reference signal and the first resultant signal to produce another first resultant signal; and

filtering the another first resultant signal through the comb filter to produce the second resultant signal.

8. (previously presented): The method of claim 7, wherein filtering the another first resultant signal further includes matching the first resultant signal with the second compressed GPS signal.

9. (currently amended): The method of claim 7, further including:  
sending the second compressed GPS signal to [[a]]the base station via a wireless communications link.

10. (previously presented): The method of claim 9, wherein the second compressed GPS signal includes a signal identifier.

11. (previously presented): The method of claim 10, wherein the signal identifier is a Mobile Identification Number/Electronic Serial Number ("MIN/ESN").

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12. (currently amended): An apparatus for compressing a Global Positioning System (GPS) signal, the apparatus comprising:

a receiver configured to receive the GPS signal from a remote location via a wireless communications link;

a first mixer coupled to the receiver, configured to remove a carrier component of the GPS signal and to produce a first resultant signal;

a comb filter, coupled to the first mixer, configured to filter the first resultant signal and to produce a second resultant signal that includes a plurality of signals dispersed over a frequency spectrum; and

a first frequency shifter configured to shift the frequencies of the plurality of signals in the second resultant signal to produce a first compressed GPS signal, the first frequency shifter comprising:

at least one frequency generator configured to generate a plurality of signals of varying frequencies; and

a plurality of second mixers, coupled to the comb filter and to the at least one frequency generator.

13. (canceled).

14. (currently amended): The apparatus of claim [[13]]12, further including a second frequency shifter~~bandpass filter~~, coupled to the plurality of second mixers, configured to produce a second compressed GPS signal.

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15. (previously presented): The apparatus of claim 12, further including:  
a third mixer coupled to the receiver and to the first mixer and in signal communication with the comb filter, configured to produce the second resultant signal.
16. (canceled).
17. (currently amended): The apparatus of claim [[16]]15, further including a second frequency shifter~~bandpass filter signal combiner~~, coupled to the plurality of second mixers, configured to produce the second compressed GPS signal.
18. (canceled).
19. (currently amended): The apparatus of claim 17, further including a transmitter coupled to the second mixer, configured to transmit the second compressed GPS signal to [[the]]a base station.
20. (previously presented): The apparatus of claim 19, further including means for identifying the second compressed GPS signal to the base station.
21. (currently amended): The method of claim 5, further including:

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receiving an assist signal from a remote location base station via a wireless communications link; and

removing telemetry data and Doppler from the first resultant signal using the assist signal.

22. (previously presented): The method of claim 9, further including:

receiving position information derived from the GPS signal from the base station.